REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 78-96 are presently active in this case. Claims 1-77 were cancelled by previous amendments. The present Amendment amends Applicants' independent Claim 78 without introducing any new matter.

In the February 3, 2010 Office Action, Claims 78, 80-81, 84-86, 88, and 90 were rejected under 35 U.S.C. § 102(b) as anticipated by Jinbo et al. (European Patent No. 908,716, hereinafter "Jinbo"). Claims 78-85, 88, and 92 were rejected under 35 U.S.C. § 102(b) as anticipated by Fay et al. (U.S. Patent No. 4,704,033, hereinafter "Fay"). Claims 78-82, 84-86, 88, 90, and 94 were rejected 35 U.S.C. § 102(b) as anticipated by Gonze (British Patent No. GB 1,315,318). Claims 83 and 96 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gonze in view of Mossberg et al. (U.S. Patent Publication No. 2004/0173680, hereinafter "Mossberg"). Claims 87, 89, 91-93, and 95 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gonze in view of Bhardwaj et al. (U.S. Patent No. 5,580,172, hereinafter "Bhardwaj"), in further view of Matthews et al. (U.S. Patent No. 6,714,831, hereinafter "Matthews") and McKnight et al. ("Workshop on Advanced Methods and Models for Appearance of Coatings and Coated Objects," J. Res. Natl. Inst. Stand. Technol. 102, 489 (1997), hereinafter "McKnight"

In response to the objection to the drawings, Applicants respectfully traverse the objection. First, the drawings are directed to a method, and not an apparatus having structural elements that need to be shown in the figures. In addition, Section 1.83(a) has been misapplied by the pending Office Action because, the 37 CFR 1.83(a) and MPEP § 608.02(d) state the following regarding the objection to drawings:

> The drawings are objected to under 37 CFR. § 1.83(a) because they fail to show as described in the specification. Any structural detail that is ***essential for a proper understanding of the disclosed invention*** should be shown in the drawing. MPEP § 608.02(d).

(See M.P.E.P. § 608.02(d)). The structural setup for the method that is described with reference to Applicants' independent Claim 78 includes a radiation source generating radiation, a mask that can generate masked radiation, and a sample subjected to radiation that is subject to the masked radiation. (See Applicants' Specification, p. 11, ll. 1-6, pp. 15-17.) For example, with reference to Example 1, the specification explains that the sample can be a light spruce wood panel, and the radiation source can be the sun producing sunlight. (See specification, p. 17, ll. 10-27.) Therefore, the structural elements of the apparatus used to perform the method of Applicants' independent Claim 78 is clear for one of ordinary skill in the art, and no drawings representing the apparatus are "essential for a proper understanding of the disclosed invention," as required by 37 C.F.R. § 1.83(a). Moreover, the multiple rejections formed by the pending Office Action provide further evidence that Applicants' invention as described in the claims is clear, and additional figures are not required for a proper understanding of the claims.

Accordingly, Applicants respectfully request reconsideration of the objection to the drawings in light of the above discussion.

Moreover, Applicants' independent Claim 78 is amended to recite that "the specific intensity distribution is not homogeneous," and to recite "determining an extent to which the specific intensity distribution of the masked radiation correlates with the response function." These features find non-limiting support in Applicants' disclosure as originally filed, for example in the specification at page 4 and at page 8. No new matter has been added.

In response to the rejections of Applicants' claims under 35 U.S.C. §§ 102(b) and 103(a), Applicants respectfully traverse the rejection, and request reconsideration of the rejection, as next discussed.

Briefly summarizing, Applicants' independent Claim 78 is directed to a method for detecting change of a physically measurable property of a sample. The method includes the steps of (i) generating and passing radiation through an optical mask to generate masked radiation having a specific intensity distribution, the specific intensity distribution having a known pattern function that depends on a position where the radiation has passed through the mask, and ***the specific intensity distribution is not homogeneous***; (ii) subjecting the sample to the masked radiation for a defined action time, to thereby cause a change in a physical property of the sample during the defined action time; (iii) detecting at least one of transmission, reflection, and scattering of analysis radiation generated by at least one of transmission, reflection, and scattering of the masked radiation by the sample, as a function of position coordinates of the analysis radiation relative to the sample and a wavelength of the analysis radiation, so as to determine a response function that describes intensity of the at least one of transmitted, reflected, and scattered analysis radiation as a function of the position coordinates relative to the sample and the wavelength; and (iv) determining a correlation of the specific intensity distribution of the masked radiation with the response function by a correlation analysis, the correlation analysis producing a measure of a change of the physically measurable property of the sample due to the masked radiation during the defined action time, and ***determining an extent to which the specific intensity distribution of the masked radiation correlates with the response function***.

Turning now to the applied references, Fay is directed to an optical alignment apparatus, for positioning masks relative to a wafer 10 for x-ray photography. (Fay, Abstract.) Fay explains that his wafer 10 and mask 11 can be vertically and horizontally

aligned towards each other, for lithography purposes, by the help of laser diffraction to generate an alignment signal. (Fay, col. 3, ll. 9-16, col. 4, ll. 22-25, Fig. 4.) For this purpose, Fay focuses a laser beam onto a reflection grating located on the wafer 10 by means of a Fresnel zone plate, the laser beam originating from a helium-neon laser source 20. (Fay, col. 3, ll. 7-10, col. 5, ll. 50-55, see also "wafer diffraction grating" in Fig. 1). The Fresnel zone plate used for the alignment is part of the mask 11. (Fay, col. 3, ll. 1-4.) Fay then detects the diffracted laser beams α_1 and α_2 that were reflected from wafer 10 with a measurement system, and the measurement system includes lenses 13, 15, mirrors 32 and 16, and first and second photon multiplier tubes 18, 33. (Fay, col. 3, ll. 9-16, Fig. 4, col. 4, ll. 34-42, col. 5, ll. 50-65.) However, Fay fails to teach all the features of Applicants' independent Claim 78. In particular, Fay at least fails to teach:

> (iii) detecting at least one of transmission, reflection, and scattering of analysis radiation generated by at least one of transmission, reflection, and scattering of the masked radiation by the sample, as a function of position coordinates of the analysis radiation relative to the sample and a wavelength of the analysis radiation, so as to determine a response function that describes intensity of the at least one of transmitted, reflected, and scattered analysis radiation as a function of the position coordinates relative to the sample and the wavelength; and
>
> (iv) determining a correlation of the specific intensity distribution of the masked radiation with the response function by a correlation analysis, the correlation analysis producing a measure of a change of the physically measurable property of the sample due to the masked radiation during the defined action time, and determining an extent to which the specific intensity distribution of the masked radiation correlates with the response function

(Claim 78, portions omitted.) In Fay, a diffraction grating that is located on the wafer 10 has to provide constant diffraction properties, and is irradiated by helium-neon-laser. Therefore, Fay's helium-neon-laser does not cause any change of a "physically measurable property of the sample" as required by Applicants' independent Claim 78. A change of a "physically measurable property of the sample" depends not only on the radiation used, but also on the type of sample. In Fay it is clear that the helium-neon-laser light does not cause any

environmental effect to the wafer 10. Contrarily, the helium-neon-laser light is used for the sole purpose of aligning a mask, as discussed above. The actual radiation used in Fay to create patterns on the wafer 10 is performed after the alignment of the mask, and is unrelated to the use of the helium-neon-laser light. (See Fay, Abstract, col. 1, ll. 40-45.)

In addition, Fay is entirely silent on determining a correlation of the specific intensity distribution of the masked radiation with the response function by a correlation analysis, by determining an extent to which the specific intensity distribution of the masked radiation correlates with the response function, as further required by Applicants' independent Claim 78. As a fact, Fay is silent on a correlation analysis.

Therefore, the applied reference Fay fails to teach every feature recited in Applicants' independent Claim 78, and Claims 78-96 are believed to be patentably distinct over Fay.

The reference Jinbo, used by the pending Office Action to reject the features of Applicants' independent Claim 78, fails to teach all the features of Applicants' independent Claim 78, as next discussed.

Jinbo is directed to a method for estimating durability of an optical member against pulsed excimer laser beam irradiation. (See Jinbo, Abstract.) The method includes a step of irradiating a test sample for the optical member with a pulsed excimer laser beam to induce changes in transparency of the test sample with respect to the pulsed excimer laser beam, the irradiation being performed for such a time period as to cover not only a linear region and a saturation region and a step of measuring changes in the transparency of the test sample. (Jinbo, Id.) In Jinbo, because the user of his method is interested in seeing how the transparency of an optical member changes, and measures absorption coefficients as a function of the number of pulses, the irradiation is performed with a homogenous laser beam pattern. (Jinbo, p. 5, ¶ [0026]). In addition, Jinbo explains that the "irradiation energy of the

laser beam . . . passes through the homogenizer optical system 2." (Jinbo, p. 5, ¶ [0020]). Jinbo therefore does not teach non-homogenous energy distributions.

Moreover, Jinbo fails to teach a step of detecting of analysis radiation as a function of position coordinates of the analysis radiation relative to the sample and a wavelength of the analysis radiation, as further required by Applicants' independent Claim 78. There is no nexus between position coordinates and the analysis radiation in Jinbo. Also, Jinbo fails to teach any step of determining an extent to which the specific intensity distribution of the masked radiation correlates with the response function, as required by Applicants' independent Claim 78.

Therefore, the applied reference Jinbo fails to teach every feature recited in Applicants' independent Claim 78, and Claims 78-96 are believed to be patentably distinct over Jinbo.

The reference Gonze, used by the pending Office Action to reject the features of Applicants' independent Claim 78, fails to teach all the features of Applicants' independent Claim 78, as next discussed.

Gonze explains that some parts of the sample are irradiated, while others are not, and the irradiated sample is then compared to a neighboring area that has not been irradiated, by partially masking the surface of the sample. (See Gonze, p. 3.) But Gonze fails to teach a correlation analysis as required by Applicants' independent Claim 78. In particular, Gonze fails to teach a step of determining a correlation of the specific intensity distribution of the masked radiation with the response function by a correlation analysis, by determining an extent to which the specific intensity distribution of the masked radiation correlates with the response function. As discussed above, Gonze merely compares irradiated parts of the sample with non-irradiated parts, and therefore dos not compare specific intensity

distributions with a response function, as recited in Applicants' independent Claim 78. In Gonze, there is only a simple comparison between two areas.

Therefore, the applied reference Gonze fails to teach every feature recited in Applicants' independent Claim 78, and Claims 78-96 are believed to be patentably distinct over Gonze.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 78-96 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

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